

APPENDIX 2:

Proposed Notice on AMOC Delegation

December 3, 1995

**U.S. Department of Transportation
Federal Aviation Administration**

**SUBJECT: STRUCTURAL DESIGNATED ENGINEERING REPRESENTATIVE
 (DER) APPROVALS OF ALTERNATE MEANS OF COMPLIANCE TO
 AIRWORTHINESS DIRECTIVES (AD) AND AD MANDATED
 REPAIRS**

REFERENCE (reference the ARAC report here)

1. PURPOSE. This notice provides guidance for delegating authority to certain type certificate holder (TCH) Structural Designated Engineering Representatives (DER's) to approve general deviations or alternative configurations for Airworthiness Directive (AD) required repairs and modifications. This delegation can be granted where the FAA determines that the intent of the AD was to restore the airplane found to have damaged structure into compliance with the airplane type certification basis or other identified regulatory airworthiness standard. This guidance will increase standardization of DER authorizations that may be granted by various Aircraft Certification Offices (ACO's) to TCH DERs.

2. DISTRIBUTION. This notice is distributed to the Washington headquarters branch levels of the Aircraft Certification Service; to the branch, section, and staff levels in the Aircraft Certification Directorates; to the Brussels Aircraft Certification Staff; to the branch level in all Aircraft Certification Offices and Field Offices; to Office of the Chief Counsel and Assistant Chief Counsels; to the Washington headquarters branch levels of the Flight Standards Divisions; and to all Aircraft Evaluation Groups.

3. BACKGROUND. The Federal Aviation Administration (FAA) has historically not authorized Designated Engineering Representatives (DERs) to approve any deviations to the repairs or modifications mandated by Airworthiness Directives (ADs). This policy was based, in part, on section 314(a) of the FAA Act of 1958 which provides for the Administrator to delegate to any properly qualified person any work, business, or function respecting the examination, inspection, and testing necessary to the issuance of certificates under Title VI of the Act, and the issuance of such certificates in accordance with standards established by the Administrator. Thus, while the Act allows the FAA to delegate to DERs the findings of compliance to known, defined, and published standards established by the FAA, such as 14 CFR Parts 23, 25, 27, 29, 33, and 36, leading to the issuance of certificates, the act does not permit the FAA to delegate discretionary determinations of acceptability, such as those frequently involved in approving deviations from ADs.

A number of initiatives have been undertaken in order to ensure the continued structural integrity of older airplanes. Many of these initiatives have required extensive structural modifications and repairs which have resulted in a substantial increase in the number of AMOC requests for structural ADs and a corresponding increased workload at the cognizant Aircraft Certification Office (ACO). Many of these AMOCs have been for relatively minor deviations to mandated instructions.

In order to respond to the growing number of AMOC requests without compromising safety and customer satisfaction, ACOs in conjunction with the TCHs' Designated Engineering Representatives (DER's) have developed various processes for review and approval of AMOC requests. Although those processes have been working rather well, they are designed to address relatively minor deviations and are not sufficient to respond to an ever increasing number of AMOC requests.

An FAA/Industry Working Group (hereafter referred to as the AMOC team) was formed to review existing processes and find ways to improve them. The AMOC team's objectives were as follows;

- A) Improve the timeliness of issuance of AMOC approvals
- B) Maintain the same level of safety under the existing system
- C) Reduce the need for AMOC while maintaining legal enforceability of the ADs
- D) Standardize the process for issuing AMOCs throughout the FAA
- E) Accomplish the foregoing in a cost effective manner for industry, and without increasing the need for FAA resources

The AMOC team has completed the assigned tasks and has developed a series of recommendations, which if implemented will satisfy the above objectives. This notice describes one of the recommendations of the AMOC team.

Based on a review of AMOC approvals and on information provided by TCHs and operators, the team concluded that deviations from structural repair/modification ADs create the most problems for the operators and represent the largest AMOC workload that does not involve discretionary determinations of acceptability. The team concluded that the FAA should authorize certain TCH DER's approval authority for AMOCs to structural repair and modification ADs. Extending this authority would significantly reduce the number of AMOC requests submitted to the ACOs for approval. Should this program be successful, the team recommended that the FAA consider extending approval authority to TCH DERs in other areas, such as system and propulsion.

This notice provides guidance for delegating authority to TCH DER's to approve engineering data for general deviations or alternate configurations for AD required repairs

and modifications of individual airplanes. It also provides guidance for delegating authority to DER's to approve certain repairs mandated by AD where no previously ACO approved repair exists. This delegation can be granted where the FAA determines that the intent of the AD was to restore the airplane found to have damaged structure into compliance with the airplane type certification basis or other defined airworthiness standard. Implementation guidelines for a more comprehensive TCH DER oversight and monitoring system necessitated by expanded TCH delegation are included. This guidance will enable the standardization of DER authorizations for approval of deviations from ADs that may be granted by various ACO's.

When the standards required by an AD are well defined, it is possible to delegate approval of any repair (interim or permanent) that may have arisen in conjunction with showing compliance to that AD. If the intent of an AD is to bring the level of safety to that of the certification basis of the airplane, or some other defined standard, then delegation is feasible. TCH DERs can be delegated to approve temporary or interim repairs that are the subject of an AD if the standards required by the AD are well defined and the temporary repairs are fully substantiated. The Limitations section of this Notice contains guidelines for the delegation of approval of AD related temporary or interim repairs.

4. IMPLEMENTATION PROCEDURES. The ACO should determine for which existing structural ADs delegation of general deviations and alternate configurations for AD required repairs and modifications is acceptable. Operator and manufacturer inputs should be considered with priority placed on those ADs which have resulted in the most AMOC requests.

The authorization for TCH DERs to approve general deviations or alternate configurations for AD required repairs and modifications should be in a letter from the cognizant ACO manager to each TCH DER determined to be qualified to make such a finding. Specifics of the delegation process shall be provided in a letter from the cognizant ACO manager to the TCH.

The letter to the TCH DERs should include or specify the following:

- A. A listing of those ADs that the FAA has determined that the DER is authorized to make findings (i.e. those ADs that the ACO has determined were intended to restore the airplane into compliance with the airplane type certification basis or other defined airworthiness standard.).
- B. A statement that the DER is authorized to make these findings for specified models of airplanes for future ADs which contain a statement allowing TCH DER's approval of certain AMOCs.
- C. An identification of the standards to be applied for the DER to find compliance and the methods for showing compliance that would be acceptable to the FAA. The standard to be applied can be the certification basis of the airplane. However, in some cases it

will be necessary to define a standard not included in the certification basis, by specific Federal Aviation Regulation (FAR).

- D. A statement that these approvals must be granted in accordance with the process detailed in the letter to the TCH (as described below).

The letter to the TCH should indicate or specify the following:

- A. A description of how the ACO will administer oversight and monitoring and of any separate reporting requirements associated with this authorization.
- B. A statement that the ACO has the authority to rescind any DER approval that is granted in accordance with this delegation and found to be inappropriate; however, this would be done only after consultation with the operator of the effected airplane and in consideration of the operator's needs.
- C. A statement that the authority of individual DERs regarding particular ADs may be limited by subsequent letter to the individual DER.

The listing of ADs should be developed in consideration of operator and manufacturer inputs with priority placed on those ADs that have resulted in the most AMOC requests. The list of ADs may be revised as necessary to include other ADs or to remove ADs, at the ACO's discretion.

In order to standardize the approval process and to ensure recognition that the DER was properly authorized to make such findings, the following minimum standards should be imposed regardless of which ACO grants the authority. The approvals by the DERs must be executed on FAA form 8110-3 and must specify the following:

- A. Description of AMOC including the nature of the deviation
- B. AD number and the specific paragraph for which AMOC approval is granted
- C. That the approval meets the applicable sections of the airplane type certification basis or other defined airworthiness standard for that AD
- D. Reference to the FAA letter (reference and date) that granted this authority to that particular DER
- E. DER signature and date

For ADs that are issued after the initial identification of eligible ADs and authorized DERs is made, the ACQ issuing the AD shall determine whether the intent of the AD is to restore the structure into compliance with the airplane type certification basis or other defined airworthiness standard. If the level of safety intended by the AD does not exceed that defined by the certification basis or other defined airworthiness standard, then delegation of deviations should be granted to authorized TCH DERs. If a discretionary level of safety is determined to be required by the ACO Manager, then delegation to DERs for that AD is not possible.

If delegation is acceptable, a statement similar to the following should be included in the AD:

Modify/repair the (item) in accordance with the (service document), or in accordance with other data meeting the certification basis of the airplane (or other defined airworthiness standard) approved by a (type certificate product manufacturer) DER who has been authorized by the Manager of the (cognizant ACO) to make such findings.

The ACO should monitor and review such approvals ensuring that they continue to achieve the required level of safety imposed by the AD. The ACO must take appropriate action as necessary to correct any approvals which do not achieve the required level of safety including revocation of the approval and delegation if deemed necessary.

5. DELEGATION OVERSIGHT SYSTEM.

Expansion of AMOC approval delegation to the TCH DERs requires an appropriate oversight system. Currently, the oversight systems which are in place are developed at a local level and are based on agreements between the TCHs and the ACOs. With the expansion of delegation of AMOC approvals, the existing oversight processes should be re-evaluated. The team believes that a timely reporting of the AMOC approvals to the ACO is essential to maintain the existing level of safety.

The AMOC team does not recommend a specific process and believes that the ACOs are in a better position to develop such a system. However, for the purposes of standardization, certain key features should be common among all oversight processes. It is clear that prior to any increased delegation, a comprehensive oversight system for monitoring TCHs with this authority must be put into place.

Some of the essential features of a comprehensive system are as follows;

- A. The TCH shall provide the 8110-3 Form to the ACO within 10 working days of the approval or other time agreed upon between the TCH and the cognizant ACO.
- B. The 8110-3 Form will include the following information;
 - AD number and paragraph
 - Airplane model, serial number and operator
 - A description of the AMOC including part names and numbers, part serial number if applicable, description of damage, cracks, repair.
- C. The operators' maintenance program shall include a system for notification of the PMI by the operator of these approvals.

- D. The PMI should ensure that the system established by the operator is adequate to ensure timely notification.

The AMOC team believes an oversight system with the above features provides adequate means for the ACO's to monitor the AMOC approval activities by the TCH DER's.

6. LIMITATIONS

- A) The ACO that initiated the AD is the only ACO that has the authority to approve AMOCs to that AD and is therefore, the only ACO that can delegate that authority to TCH DERs.
- B) This delegation is limited to certain TCH Structural DERs to approve general deviations or alternative configurations for Airworthiness Directive (AD) required repairs and modifications. The following cannot be delegated:
- Extensions or adjustments to the compliance times specified in ADs.
 - Discretionary judgments of acceptability
 - Alternate inspection methods.
 - Unrepaired damage, such as corrosion and cracks.
 - AMOCs for which analysis or paperwork has yet to be formally submitted.
- C) Only TCH DERs with structural authorization shown in FAA Order 8110.37A, Appendix 2., Figure 1., Chart A are eligible for this delegation authority, since only deviations to structural repairs and modifications are being delegated.
- D) The delegation must be only for the defined deviations to AD's for repairs and/or modifications to a single aircraft. Approvals of the same AD deviation for multiple airplanes shall not be accomplished by a TCH DER. Requests for an alternate means of compliance to an AD will be submitted to the cognizant ACO Manager.
- E) The following guidelines should be followed for the delegation of AD related temporary repairs to TCHs' DERs.
- a. Repair must meet the certification basis of the aircraft. It is, however, understood that it may lack certain normally recommended design practices.
 - b. The durability of the most critical detail of the repair will be at least twice the structural maintenance period and not less than 18 months (based on projected aircraft utilization).
 - c. Repair would be replaced by a permanent repair (or terminating action in the case of an AMOC) by the next structural maintenance check not to exceed 24 months. Further, the temporary repair must be designed such that its inspection threshold is

greater than its replacement period. In other words there should not be a need for inspection of the repair while it remains installed.

d. TCH whose DER authorizes such repair would be required to:

- Notify the airline of the terms of the life limited DER approved repair for the particular AD. The notification would include a copy of the 8110-3 form indicating DER approval and stating that the approval is time limited and will have to be removed on or before a specific date (or flight cycle limit, time limit etc.).
- Notify the cognizant ACO within 72 hours of such an approval or other time agreed upon between the TCH and the cognizant ACO.
- Keep all records (telex's, stress and life analyses, letters etc.) for a period of time consistent with normal continuing airworthiness record keeping requirements, not less than one year after the removal of said repair from the aircraft.
- Have available the necessary paper work to support any audits that the cognizant ACO deems necessary to oversee the system.
- Follow other ACO/AEG/PMI notification requirements as defined in the delegation oversight system.

The intent of the above guidelines is to revert back to the certification basis of the aircraft which is well defined and the DERs can easily find compliance to the applicable rules. There are situations where a temporary repair may not meet these guidelines, in which case ACO involvement is necessary.

F) The delegating ACO may rescind any AMOC approval granted by a TCH DER; however, this must be done only after consultation with the operator of the effected airplane and in consideration of the operator's needs.

7. TERMINATION OF AUTHORIZATION. The ACO should monitor and review such approvals ensuring that they continue to achieve the required level of safety imposed by the AD. The ACO must take appropriate action as necessary to correct any approvals which do not achieve the required level of safety including revocation of the approval and delegation if deemed necessary. This delegation may be revoked at any time for any reason the ACO manager determines is appropriate.

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